Ivermectin lipid-based nanocarriers as novel formulations against head lice

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Résumé en anglais	The use of pyrethroids to control the human head louse, Pediculus humanus capitis De Geer (Anoplura: Pediculidae), has suffered considerable loss of efficacy due to the evolution of resistance. Thus, the development of efficiently insecticide delivery systems is imperative for the control of head lice. We studied the insecticidal activity of ivermectin-loaded lipid nanocapsules (IVM-LNC) against permethrin-resistant head lice from Argentina. The LNC, prepared by a phase inversion procedure, were characterized in terms of size, surface potential, and physical stability. These nanoparticles were nearly spherical with mean diameters of 55 nm and narrow size distribution (PI ≤ 0.2). The KT50 mortality values of head lice after exposure to two IVM-LNC formulations (0.11 and 0.28%) were significantly smaller (5 and 3 h, respectively) compared to those exposed only to LNC control group (8 h). This investigation showed the effectiveness in the encapsulation of ivermectin (IVM) into stable LNC dispersion with a potential clinical activity against head lice.
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